

Notice of Allowability

Application No.

10/709,389

Examiner

John J. Tabone, Jr.

Applicant(s)

GRUPP ET AL.

Art Unit

2117

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 04/09/2007 and arguments/amendments filed 03/15/2007.
2. ☒ The allowed claim(s) is/are 1,4-10,13-15 and 17-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |


GUY LAMARRE
PRIMARY EXAMINER

DETAILED ACTION

1. Claims 1, 4-10, 13-15, and 17-30 are presently pending in the application and have been examined. Claims 11-12 have been cancelled. Also, claims 2-3 have been cancelled by the following Examiner's Amendment.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Pamela M. Riley on 06/07/2007.

The application has been amended as follows:

Cancel **claims 2 and 3**.

Claim 1, line 11: delete the word "and"; line 13 (last line): change the period (.) at the end of the sentence to a comma (,).

Claim 1: add the following to the last line of claim 1:

wherein said flexible length instruction register is longer than a longest embedded TAP instruction register,

wherein said flexible length instruction register further comprises additional bit segments,

Art Unit: 2117

wherein all of said instruction register segments combined are as long as said longest embedded TAP instruction register,

wherein said additional bit segments make said flexible length instruction register longer than said longest embedded TAP instruction register, and

wherein said additional bit segments comprise bits that are adapted to choose an effective length of said flexible length instruction register.

Claim 4, line 1: change "claim 3" "to claim 1".

Claim 5, line 1: change "claim 3" "to claim 1".

Response to Arguments

3. Applicant's arguments, filed 03/15/2007, with respect to independent claims 10, 15 and 22 have been fully considered and are persuasive. The Final Rejection for these claims of 01/17/2007 has been withdrawn. Further, in lieu of the Examiner's Amendment above, the Final Rejection of 01/17/2007 for independent claim 1 has been withdrawn.

Allowable Subject Matter

4. **Claims 1, 4-10, 13-15, and 17-30** are allowed.

The following is an Examiner's Statement of Reasons for Allowance:

The present invention relates to an integrated circuit chip structure that has a chip level test access port (TAP) controller and more particularly to a chip that also includes a plurality of embedded TAPs connected to the chip level TAP.

The claimed invention as set forth in **claim 1** (broadest claim) recites features such as:

- a chip level test access port (TAP) controller having a chip-level TAP instruction register,

- a plurality of embedded TAPs connected to said chip level TAP controller, wherein said embedded TAPs have instruction register lengths that differ from said chip-level TAP instruction register,

- wherein said chip level TAP instruction register comprises a flexible length instruction register,

- wherein said flexible length instruction register comprises a plurality of instruction register segments,

- wherein at least two of said instruction register segments comprise multiple bits, wherein said flexible length instruction register is adapted to accommodate different length instruction registers of said embedded TAPs,

- wherein said flexible length instruction register is longer than a longest embedded TAP instruction register,

- wherein said flexible length instruction register further comprises additional bit segments,

- wherein all of said instruction register segments combined are as long as said longest embedded TAP instruction register,

- wherein said additional bit segments make said flexible length instruction register longer than said longest embedded TAP instruction register, and

wherein said additional bit segments comprise bits that are adapted to choose an effective length of said flexible length instruction register.

The prior arts of record teach the claimed chip level TAP controller, plurality of embedded TAPs, flexible length instruction register; **Jacobson** (US-7073110) is one example of such prior arts. Newly cited prior art, **Schultz** (US-7111217), teaches a flexible length instruction register where at least two of said instruction register segments comprise multiple bits (Selectable Bit Reg 302, Fig. 3 col. 7, ll. 9-15, col. 8, ll. 14-39).

The prior arts of record, however, fail to teach, singly or in combination, a *flexible length instruction register* that is longer than a longest embedded TAP instruction register and further comprises additional bit segments as claimed. As such, modification of the prior art of record to include the claimed *flexible length instruction register with additional bit segments* can only be motivated by hindsight reasoning, or by changing the intended use and function of the prior art themselves. Therefore, it is not clear that one of ordinary skill in the art at the time of the invention would have made the necessary modifications to the prior art of record to encompass the *flexible length instruction register with additional bit segments* set forth in the present application. Moreover, none of the prior arts of record, taken either alone or in combination, anticipate nor render obvious the *flexible length instruction register with additional bit segments* as set forth in **claim 1**. Independent **claims 10, 15 and 22** recite similar allowable features as **claim 1** and are allowable for same reasons.

Art Unit: 2117

Hence, **claims 1, 4-10, 13-15, and 17-30** are allowable over the prior arts of record.

The Examiner agrees with the Applicant's arguments with regard to this feature in view of the arts of record; therefore, the Examiner favors the allowance of **claims 1, 4-10, 13-15, and 17-30**. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Tabone, Jr. whose telephone number is (571) 272-3827. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JACQUES H. LOUIS JACQUES can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2117

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


John J. Tabone, Jr.
Examiner
Art Unit 2117
6/7/07


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PRIMARY EXAMINER